VITAMIN K

Understanding The Healing Powers Of A Little Known Vitamin

Matthew Mahone and Clint Fuqua

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Preface

Today, you are going to discover one of the most important vitamins you need to stay healthy and prevent disease. What is it? I am talking about a fat soluble vitamin known as Vitamin K that can improve your overall health.

Vitamin K is one of the group of fat-soluble vitamins (A, D, E and K). It is a super nutrient that humans once thrived on, and has been ignored by scientists for almost seventy years.

We are all aware of the importance calcium plays in our bones but it's safe to say that most of us are unaware that Vitamin K actually plays a significant role in maintaining our bone health. Vitamin K is absolutely vital for bone and vascular health.

And how could we possibly know about the importance of Vitamin K growing up? Our moms never reminded us to eat food to acquire the much needed Vitamin K for bone health.

Many of us are unaware of the sufficient amount of this vitamin needed to strengthen our bones. We've all been so focused on Calcium and Vitamin D to maintain bone health that we have unaware of the secret vitamin to help avoid diseases like osteoporosis and atherosclerosis.

As a nutritionist, I believe it is crucial that everyone should be made aware of the importance of this Vitamin and the key benefits it provides.

I believe that mastering your health can be made very easy. We just need the right people to inform and guide us. Lucky for you I am joined by an experienced expert who will educate us on the importance of Vitamin K and how to incorporate it into your diet!

He is an accomplished Certified Health Coach and Personal Trainer with over two decades of experience by the name of Clint Fuqua. He will provide you with an in depth, easy to follow guide as well as a detailed food sources needed to obtain Vitamin K.

Hope you enjoy it,

Matthew Mahone

About The Expert

Clint Fuqua grew up in Lubbock, Texas and as a child had a great interest in science and the arts. His original dream was to be an engineer and design space craft and airplanes. His passions then turned to designing cars, studying martial arts, and exercise. His eighth grade year Clint became the most injured athlete of the year leading to many hours, days, weeks, and months in the training room. Interestingly this bit of bad luck was the start of a life dedicated to helping others become not only healthier, but the healthiest they could be.

During his years in high school Clint was the head student trainer and became the go-to guy for everyone concerning health, exercise, and nutritional supplements due to his relentless pursuit of knowledge, sense of logic, and ability to explain what methods would work best for different people.

During his first year in college Clint developed a new passion for personal training after questioning a future in physical therapy and medicine. The next 2 years he worked in several gyms learning about the fitness industry, educating new trainers about assessment and exercise basics, and learning about the real needs of people in search of better health.

In 1997 he moved to Dallas and began working at a large private gym which would lead to 10 years of intensive study and mastery of biomechanics, nutritional theories, program design, and motivational strategies. During this time he had the honor of instructing trainers

about biomechanics at The Cooper Institute of Aerobic Research and mentoring new trainers at the private club. In 2007 Clint took the opportunity of a lifetime to help build and grow a nutritional supplement company that was struggling and in need of a new direction. Over the next 3 years Clint helped re-brand the company, formulate new products, and establish contracts with Professional Athletes, the US Military, and national retailers including The Vitamin Shoppe.

Clint has now created a new online health and fitness show, seminar series, and series of books all titled "Personal Health Care Reform". He commits to help everyone improve their health, increase their fitness level, and maintain their health at a level allowing them the freedom to live life on their terms. For more information and to contact Clint Fuqua please visit www.PersonalHealthCareReform.com, www.ClintsPrograms.com, and www.ClintFuqua.com.

Introduction

Koagulationsvitamin came into known existence in 1929 completely by accident as most all great discoveries have been known to do. It also went through a name change when coming to the US from Germany by way of the Danish scientist Henrick Dam whom made the initial discovery.

Vitamin K, as it is now known, was the missing link in several fowl experiments looking for a link between dietary restrictions and cholesterol that resulted in hemorrhages and bleeding. The restriction of fat and cholesterol from the bird feed left the poor chicks deficient in Vitamin K due to the inability to digest and absorb what little may have been left the feed. Nothing was noted about bone health but the hemorrhaging continued even as cholesterol was added to the restricted feed.

The "coagulation vitamin" was soon isolated then added back into the chicks' diets along with the cholesterol and they started strutting around the yard looking fine again. As you read on and discover how vital Vitamin K is to vascular and bone health we will all want to thank that Danish scientist for stumbling into greatness. Dam, that was a great discovery.

Mmmmmm K

The Phyll-whos and Phyto-whats?

Vitmain K comes in many more that just a single form. So let's look at the very first derivative discovered that helped those chics in the yard look fine again after being bloody hot messes. K1 (aka Phylloquinone, Phytomenadione, or Phytonadione) is found in green leafy vegetables and aid the chlorophyll in turning sun energy into plant energy. This is why it is known as the plant form of Vitamin K.

In animals K1 can create clotting factors to aid in plugging up that occasional razor cut in the morning so it doesn't turn into a trip to the corner medical clinic or the ER. The only problem here is that K1 must be converted into bioactive forms of K2 to have any effect in the human body. This conversion happens in the artery walls through calcium binding which will aid in born production and reduce calcification of the vascular system, in the testes through cholesterol binding to aid in sperm production, and in the pancreas through enzymatic action to create clotting proteins.

So if a person is lacking adequate essential fat intake, calcium metabolism, or has pancreas issues like diabetes or lack of enzyme activity this conversion is hampered and you might just turn into bloody hot mess at the slip of a razor. So have your greens by all means and make sure to lightly salt and butter them a little to fill all your body's needs or that salad will just leave you a hungry, frail, bloody hot mess.

The Mmms

Vitamin K2 is the quite literally the big beefy powerhouse in the K family. In fact it is so prolific there are 11 different forms of bio-active K2 that all come from animal food sources and bacteria fermentation in your large intestine. These are all called "Menaquinones" and normally are listed as K2 or more specifically MK-(4, 7, or 11) when you see them on a nutritional supplement label as they all play slightly different roles in the body and when combined with medications.

MK-4 is the base model and is the form found most in your body since it comes from tasty meat filled meals is also converted from K1 in your body (as mentioned previously). It covers the bases of creating clotting factors, building strong bones, and healthy swimmers (aka sperm). Your friendly neighborhood gut bugs however like to take that base model and pimp it out with even better features.

MK-7 is produced by your gut bacteria, is found in fermented foods and helps regulate vascular calcification, clotting factors, and calcium utilization often hampered by medications like Coumadin, Warfarin, and Aspirin.

MK-11 (along with all other forms) is still being heavily studied for potential Alzheimer's, liver cancer, and diabetes treatment options. So these forms of Vitamin K are very powerful nutrients for your health and Mmm, Mmm good on the grill or in the crock pot.

The Big Fat Truth

The thing about fat soluble vitamins is that they are useless without fat to make them soluble in your digestive system and useful in your vascular and lymphatic systems. The thing about fat is that it is mostly useless without the soluble vitamins needed for cellular and metabolic processes. The thing about cholesterol is that your body will produce more and more of it to protect your organs and vascular system in the absence of essential fatty acids, or essential nutrients, or both due to restrictive dietary practices even if it is for "health".

Make sure you are getting adequate amounts of essential fatty acids including saturated fats (MCT/CLA), unsaturated fats (Omega 6/Omega 9), and poly unsaturated fats (Omega 3) in the foods you eat every day. Make sure you get these fats from high quality organic sources for the highest amounts of Vitamin K, other fat soluble phytonutients, and the ability to absorb them properly when combined with vegetables and fruits.

For example, cooked spinach has a 5% bioavailability of phylloquinone, however, fat added to it increases bioavailability to 13% due to the increased solubility of vitamin K in fat. So get your Vitamin K primarily from meat sources, butter those greens, and make sure you get the best supplemental forms mixed with essential fats and other complementary nutrients to ensure your health and less blood in the bathroom when shaving.

K-Pow!

Strong to the Finach

Ever hear the story of a feisty little sailor that kept on getting beat up by a big overbearing bully over the love of a very tall slender and fickle girl until he squeezed open a can of spinach!? If this doesn't sound familiar you have sadly missed out on some classic Saturday morning cartoons and a little known Robin Williams film from way back in the day. My recommendation it to pop over to youtube, eye a few clips, and maybe have a little fresh spinach sautéed in butter with a pinch of sea salt while you watch and get back a little bit of the childhood you lost.

Many people think that Popeye got his quick recovery and super strength from the iron in those little silver cans of gushing green goodness. They are however wrong as the iron in spinach in practically useless and it was the Vitamin K1 (with a little olive oil love) that healed his bruises, stopped the bleeding, and strengthened his bones. The result was wolverine like healing after taking a beating from a guy over twice his size and then delivering knockout punch after knockout punch. A very impressive feat, seeing as how it happened week after week after week and each time the big guy suffered the agony of defeat.

I know it is just a cartoon, but it does help to illustrate the function of Vitamin K and it did sell quite a bit of spinach back in that time period and get kids to eat it without protest. So go get back some

of your lost childhood and make sure you are strong to the finach ‘cause you eat your buttery salted sautéed spinach.

Blood and Bone

If vampires were real they would be the number 1 purchasing population of K2 rich foods and nutritional supplements making our necks a little safer at night and here is why. Vitamin K2 is required for healthy blood clotting, especially in people with Blood Type O, and there is no established upper limit because no amount studied has increase the risk of an abnormal clot. The reason is that vitamin K2 completely fills up coagulation-dependent proteins in the body to the point they can’t fill up anymore. Once this happens the remaining K2 is used for other physiological needs around the body. This is like sending a ravenous teenager to a buffet for $15 so they don’t empty out the $150 of food in the fridge and pantry you just brought home. That’s how you keep your vascular system healthy and stop the bleeding of your body, and of your bank account if you have teenagers.

To show you the safety of vitamin K2 in a whole population just look at people living in the Japanese regions. Natto, a fermented soy product, is regularly eaten daily and they have several-fold greater blood levels of vitamin K2 (MK-7). The only effect of high amounts of vitamin K2 in the blood is less osteoporosis, fewer bone fractures, and fewer heart attacks.

Soft tissues like muscle and tendons can turn to bone and leave you as limber as a stone. Exercise and daily movement will help but

adequate intake of Vitamin K1 and K2 will help to ensure that this does not happen to a much older you. Doctors performing autopsies on elderly people have often commented that it appeared the soft tissues in these once supple bodies had turned almost into bone. These doctors were referring to the systemic calcification occurring virtually everywhere except the skeleton.

Many age-related diseases can be linked to calcification including kidney stones, arthritis, cataracts, heart valve insufficiency, wrinkled skin, bone spurs, senility and, of course coronary atherosclerosis. Systemic calcification means that calcium is being deposited in soft tissues where it does not belong rather than in bones to keep them strong. A systemic review of 13 randomized controlled human trials that gave adults either vitamin K1 or K2 reduced bone mass loss, hip fractures, and both vertebral and non-vertebral fractures. Vitamin K2 in particular was associated with increased bone mineral density and was most effective by reducing the risk of vertebral fractures by 60%, hip fractures by 77%, and all non-vertebral fractures by an astounding 81%. As an added bonus higher ingestion of vitamin K2 results in a 26% reduction in all-cause mortality. Restoring optimal vitamin K levels through diet and supplementation may help to protect against all of these disorders and lead to a much healthier life.

Kicking the Can

Get it Fresh

I know you want to find the best leafy green sources of K1 so here they are minus a very important weed everyone loves to hate and pluck from their pristine yard and garden. The next time you take a rake to that little dandelion just remember it contains 778.4 micrograms per 100 grams, or 741% of the RDA recommended daily amount.

Food sources[edit]

Vitamin K_1[edit]

Food	Serving size	Vitamin K_1[59] micrograms (µg)	Food	Serving size	Vitamin K_1[59] micrograms (µg)
Turnip greens, cooked	1/2 cup	265	Turnip greens, raw	1 cup	138
Table from "Important information to know when you are taking: Warfarin (Coumadin) and Vitamin K", Clinical Center, National Institutes of Health Drug Nutrient Interaction Task Force.[60]					
Swiss chard, cooked	1/2 cup	287	Swiss chard, raw	1 cup	299
Spinach, cooked	1/2 cup	444	Spinach, raw	1 cup	145
Mustard greens, cooked	1/2 cup	210	Mustard greens, raw	1 cup	279
Kale, cooked	1/2 cup	531	Parsley, raw	1/4 cup	246
Collards, cooked	1/2 cup	418	Collards, raw	1 cup	184
Cabbage, cooked	1/2 cup	82	Green leaf lettuce	1 cup	71
Brussels sprouts, cooked	1 cup	219	Endive, raw	1 cup	116

Food	Serving size	Vitamin K_1[59] micrograms (µg)	Food	Serving size	Vitamin K_1[59] micrograms (µg)
Broccoli, cooked	1 cup	220	Broccoli, raw	1 cup	89
Asparagus	4 spears	48	Romaine lettuce, raw	1 cup	57

*chart sourced from Wikipedia

Is it Paleo??

I know you want to find the best sources of K2 and here they are. Food sources include eggs, meats (such as chicken and beef and their fat, livers, and organs) and fermented or aged cheeses, in fermented vegetables (especially natto), as well as sauerkraut and kefir.

Food 100 grams (3.5 oz) portion	Microgram (µg)	Proportion of vitamin K_2	Food 100 grams (3.5 oz) portion	Microgram (µg)	Proportion of vitamin K_2
Natto, cooked	1,103.4	(90% MK-7, 10% other MK)	Chicken Leg	8.5	(100% MK-4)
Goose liver pâté	369.0	(100% MK-4)	Ground beef (medium fat)	8.1	(100% MK-4)
Hard cheeses (Dutch Goudastyle), raw	76.3	(6% MK-4, 94% other MK)	Chicken liver (braised)	6.7	(100% MK-4)
Soft cheeses (French Briestyle)	56.5	(6.5 MK-4, 93.5%	Hot dog	5.7	(100% MK-4)

Food 100 grams (3.5 oz) portion	Microgram (µg)	Proportion of vitamin K_2	Food 100 grams (3.5 oz) portion	Microgram (µg)	Proportion of vitamin K_2
		other MK)			
Egg yolk, (Netherlands)	32.1	(98% MK-4, 2% other MK)	Bacon	5.6	(100% MK-4)
Goose leg	31.0	(100% MK-4)	Calf's liver (pan-fried)	6.0	(100% MK-4)
Egg yolk (U.S.)	15.5	(100% MK-4)	Sauerkraut	4.8	(100% MK-4)
Butter	15.0	(100% MK-4)	Whole milk	1.0	(100% MK-4)
Chicken liver (raw)	14.1	(100% MK-4)	Salmon (Alaska, Coho, Sockeye, Chum, and King wild (raw))	0.5	(100% MK-4)
Chicken liver (pan-fried)	12.6	(100% MK-4)	Cow's liver (pan-fried)	0.4	(100% MK-4)
Cheddar cheese (U.S.)	10.2	(6% MK-4, 94% other MK)	Egg white	0.4	(100% MK-4)
Meat franks	9.8	(100% MK-4)	Skim milk	0.0	
Chicken breast	8.9	(100% MK-4)			

Table from Rhéaume-Bleue, pp. 66–67.

Keeping The Meds In Check

Welcome back Clotter

Patients predisposed to abnormal blood clots, such as those with mechanical heart valves, atrial fibrillation, or excessive prothrombotic factors in the blood, especially Type O, are prescribed drugs like warfarin that interfere with the carboxylation, or filling up, of coagulation proteins. It is only in patients taking these anticoagulant drugs that the dose of vitamin K and the drugs need to be closely measured to achieve the optimal therapeutic INR range. This is usually around 2.5 in people who take warfarin.

"In a recent study in healthy individuals, Coumadin® was administered to elevate INR to 2.0, which is double the normal value for healthy adults. A higher INR means the blood is less able to clot. At a dose of 95 micrograms of MK-7, the INR dropped from 2.0 to 1.7.56

Based on what we now know about vitamin K and warfarin, a doctor might consider increasing the amount of warfarin to bring the INR back into the desired range, while enabling the patient's vascular and skeletal systems to benefit from vitamin K.

If you are taking anticoagulant drugs, do not initiate vitamin K without your doctor's approval. It is important for your INR levels to be carefully monitored during the first two months of combining moderate-dose vitamin K with warfarin.

Please know that enlightened doctors are increasingly expressing concern about the adverse effects of long-term vitamin K deficits in

warfarin-treated patients."

Excerpt from www.LEF.org

Too Much of a Good Thing can Actually Mean Better Things

One reason for the confusion over optimal vitamin K intake is that only a small amount is needed for blood to properly clot, whereas much higher levels are needed to protect against osteoporosis and calcification of soft tissues. The current RDA (recommended daily allowance) for vitamin K is 65 micrograms per day for adult females based on a 1500 calorie diet and 80 micrograms per day for adult males based on a 2000 calorie diet. If you don't already know, the RDA is the minimum amount of any nutrient needed for basic health if you are on bed rest.

So, while these amounts might be just enough to enable blood to properly clot during a day lounging on the couch binge watching your favorite shows on NetFlix they fall way below the levels found in published studies needed to protect against age-related diseases.

Consuming 100 micrograms of the MK-7 form of vitamin K2 may in itself provide optimal systemic vitamin K saturation. Compared with other forms of vitamin K, the MK-7 form of vitamin K2 remains in the bloodstream longer and reaches levels seven- to eight-fold higher. This means that just 100 micrograms of MK-7 can provide greater benefits than far higher potencies of other forms of vitamin K1 and K2.

The availability of cost-effective MK-7 as a nutritional supplement can drastically reduce the need for food based sources and provide great help for people that suffer with food allergies. One however cannot ignore the documented benefits of consuming higher amounts of vitamin K1 and the MK-4 form of vitamin K2 through a healthy diet. So don't toss out that steamy tasty bowl of buttery salted sautéed spinach in favor of a bottle of pills. Have both and live life to the fullest.

Conclusion

Words may be the only things that can hurt you when Vitamin K is taken as needed for optimal blood clotting abilities and strong bones to fend off the sticks and stones thrown at all of us in life. The natural isomers all matter to our quality of health, even those still under investigation for potential and unknown beneficial effects. Fresh is always best and that canned junk can go in the trash along with the synthetics.

The finest chicks in the yard never skimp on high quality fats to ensure proper absorption and utilization of the Vitamin K in the salads they eat. The modern day cavemen need to eat a few salads with those lean, grass fed, pastured steaks to keep the blood flowing efficiently during tough WODs. Bacteria do it best, the meat is great to eat, and plants matter most when combined with a juicy roast.

DK is a great line of clothing and an even better nutrient combination for improved bone health and posture to make those cloths look better than they did on the models. Meds can keep us wasting away in beds if they are not balanced out with the proper nutrients to increase health. Lastly; you are now thanking Dam, that was a great accidental discovery of Koagulationsvitamin and brilliant name change to K.

Expert's Note: Don't just take my witty words for it. Go do some self study on Wikipedia, WebMD, Life Extension Foundation, Pub Med, National Institute of Health, Green Med Info, Natural News, and any other viable research based organization on the web.